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Sauget
Sanitary Development & Research Association
10 Mobile Street
Sauget, Illinois 62201

F-Sauget Sewers

From: William L. DeFer, Treasurer, 618-874-3188

Date: 11/17/87 cc: B. Hanke

Sub.: VILLAGE SEWER REPAIRS

Ref.:

To : W. Smull

Attached for your review is a copy of a memorandum written by Brett outlining the recommended plan of repairs for the village sewers.

W. L. DeFer

① Can Box For G be eliminated
② Assume box #1 design is acid brick lined
③ Cost is estimated at ?

WGK 1484023

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MEMORANDUM

FROM: Brett Hanke
Association Engineer
TO: Bill DeFer

SUBJECT: Recommendation
Construction Scope Trunk Sewer Repairs

1. Investigation Findings: After the Phase I, II, and IIIA Project was bid at $5,300,000 (well over the $3,500.000 estimate), it was determined to investigate whether to perform the scoped new construction or rehabilitate the old system. On cleaning the main collector box (Box E), inspection revealed no serious structural faults. The original $5,330,000 project was designed based on a need to circumvent use of this box, as it was assumed to be damaged. In fact, it is believed to be repairable. Needed repairs include pressure grouting of apparently minor floor cracks and liner repair.

Further investigation was performed on sewers connected to Box E. This investigation revealed serious damage to the 36" VCP under the TRRA tracks, line E-B. This line requires replacement. Investigation of line H-E, a 30" VCP line, revealed replacement needed only for the approximately 30' adjacent to Box E.

Sewer box investigation during the grouting project has revealed serious deterioration of all five (5) boxes constructed in 1979.

2. Analysis: The major cost of the $5,330,000 original project was for new boxes and sewers which were chosen to allow optimim future flexibility and serviceability. This original project included rehabilitation of most of the manhole boxes in the area, as well as construction of several new boxes and box extensions. Currently available funds are insufficient to construct the project as originally scoped. It would appear that a rehabilitation project, properly scoped to eliminate the proposed new sewers and boxes while including rehabilitation of the existing facilities and replacement of the line under the TRAA tracks, would be much less expensive.

3. Recommendation: The recommended scope of work is:

a. Reconstruct deteriorated boxes B, C, D, F, G, and I. Reconstruction assures structural integrity and the employment of latest technology while modifying the box to extend fully open to the surface for ease of maintenance.

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b. Repair Box E by crack grouting and patching lining. Cleaning of liner plate, tuckpointing, and patching of missing tiles should be a sufficient repair absent structural defects of the box walls or floor. An option would be cleaning and patching, then applying a membrane system over it and bricking a full new lining.

c. Construct new line under TRAA Tracks. (This line is now sunken and leaking. The new line should be supported on piles to preclude future settlement when reconstructed.)

4. Proposed Construction Sequence:

Phase I: Whereas the southern section of sewers will be isolated for the cleaning and grouting of the double 36" VCP entering the P-Chem Plant, Box I can be reconstructed first. Box C can be rebuilt once the sewers are grouted.

Phase II: Large Box E relining requires bypass pumping initially and this facilitates reconstruction of the damaged 30' section of the 30" VCP line H - E. Simultaneously, work can begin on the new line H - B.

Phase III: When Box E is relined and the 30" line repaired, flow can be bypassed to the southeast, allowing the termination of bypass pumping. Work can then continue on Line H - B and begin on Boxes B and D.

Phase IV: When Line H - B and Box B are complete, flow can be routed through them and the project completed with reconstruction of Boxes D, F, G, and J.

Recommended additional design services by P.H. Weis in support of sewer rehabilitation:

1. Design structural concrete box, 8' x 16' open to ground surface with 20' from flowline to surface. Box should extend 3' above surface for safety. This standard design can be easily adapted by a fabricator to fit any application precluding a need for future redesign.

2. Design steel reinforecement for 36" VCP concrete encasement to maximize the strength of the concrete. Also, compute the allowable span of this "beam" in a liquified sand.

3. Design pile support system for 36" VCP (CE) and for box designed in #1 above.

? CE on CB,

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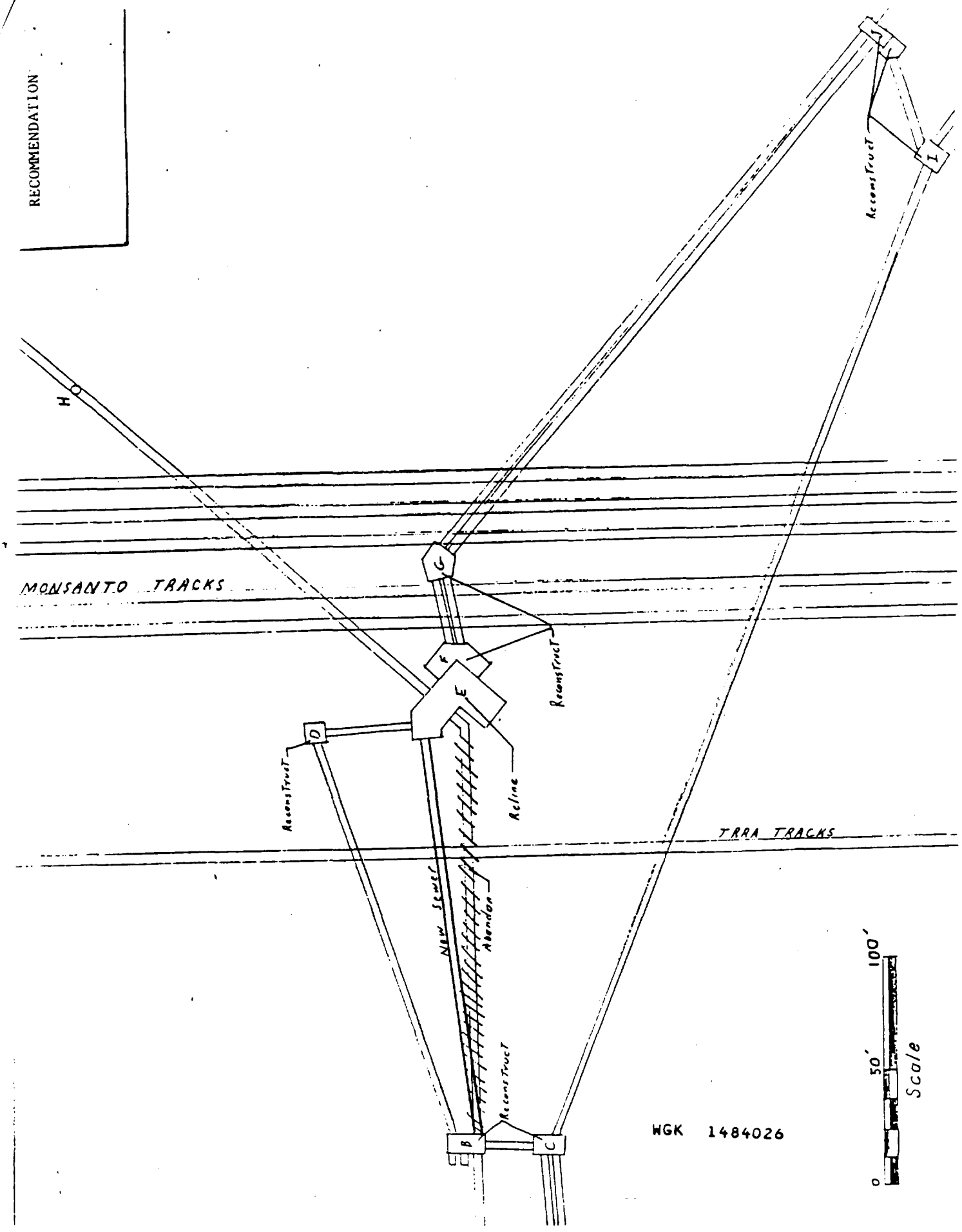

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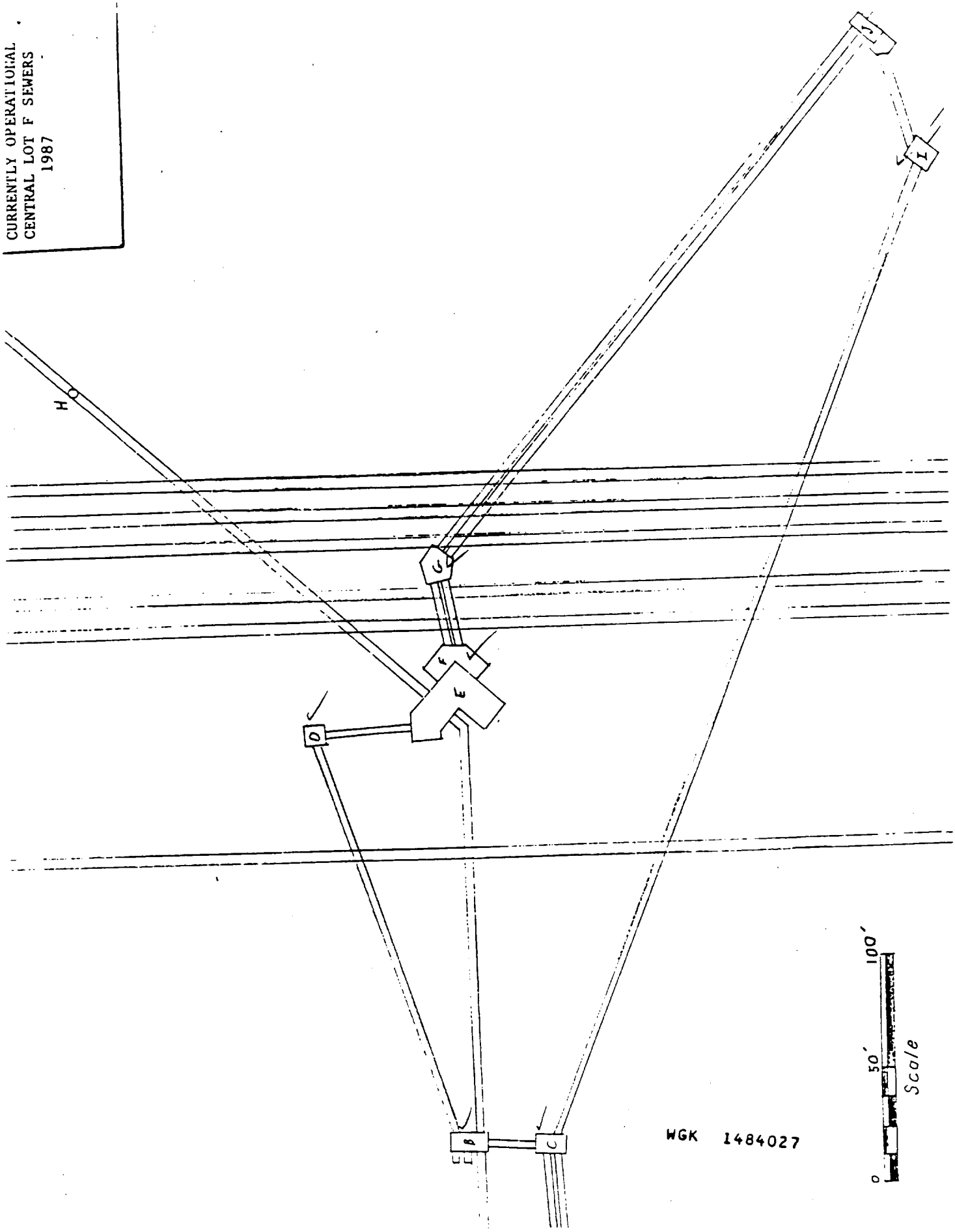

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SAUGET SEWERS

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